

IN THE CLAIMS:

Please amend the claims as follows:

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1. (Amended) A power [supplying] supply apparatus for a vehicle, comprising:

an electric power line comprising a plurality of segments [for being] wired in an interior of a vehicle from a battery, [and] for supplying [a] power to various kinds of loads of said vehicle;

[plural] a plurality of short sensors for detecting a short [between plural sections] circuit in at least one of said plurality of segments of said electric power lines; and

a control circuit for specifying [said] a short [section] circuited segment of said electric power line in accordance with a short detection condition of said [plural] plurality of short sensors.

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2. (Amended) A power [supplying] supply apparatus for a vehicle according to claim 1, further comprising: [characterized in that

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between said short sensor and another short sensor,]

a connector for connecting said electric power [lines]
line segments to each other [is] arranged between respective
short sensors.

3. (Amended) A power [supplying] supply apparatus for a
vehicle, comprising:

a battery;

a load drive [use] electric power line [for being]
wired in an interior of a vehicle from [a] the battery through
a first fuse, for driving a vehicle load;

a control circuit drive [use] electric power line [for
being] wired in said interior of said vehicle from a battery
through [another] a second fuse, for driving a control apparatus;
and

[a] at least one control apparatus including:

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a control circuit [for being] which is supplied [a] with power from said control circuit drive [use] electric power line[,]; and

a load drive circuit provided between said load drive [use] electric power line and said load, [and] for controlling a supply of a power to said load in response to a signal from said control circuit.

4. (Amended) A power [supplying] supply apparatus for a vehicle according to claim 3, [characterized in that] further comprising:

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an over-current detection apparatus provided between said load drive circuit and said first fuse, [and] for detecting an over-current condition of said load drive circuit and [further for transmitting] communicating said detected current condition to said control circuit; and

a shutdown circuit for performing a shutdown of an electric line between said fuse and said load drive circuit in response to a signal from said control circuit.

5. (Amended) A power [supplying] supply apparatus for a vehicle according to claim 3, [characterized in that] further comprising:

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a short sensor for detecting [an abnormality according to] a short circuit of said load drive [use] electric power line; and

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a shutdown circuit for performing a shutdown of an electric line between said first fuse and said load drive circuit in response to a signal from said short circuit through said control circuit.

6. (Amended) A power [supplying] supply apparatus for a vehicle according to claim 3, [characterized in that] wherein:

said control apparatus includes a communication control circuit;

a first [one] control apparatus and [another] a second control apparatus are connected to each other by a communication line [each other]; and

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[in response to a condition of a switch which is inputted to said one control apparatus, a]

supply and [a stop] interruption of [the] power [against] to a load of said [another] second control apparatus is [constituted for enable to control] controlled in response to a condition of a switch which is inputted to said first control apparatus.
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7. (Amended) A power [supplying] supply apparatus for a vehicle, comprising:

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a battery;

a first power supply [system for being] circuit wired in an interior of a vehicle through a first fuse from [a] the battery, [and] for supplying [a] power to a [various kinds] plurality of loads of said vehicle;

a second power supply [system for being] circuit wired in said interior of said vehicle through [another] a second fuse from [a] the battery, [and] for supplying [the] power to a control circuit of a control apparatus for controlling said load;
and

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a protection circuit for detecting a short circuit [abnormality] of said first power supply [system] circuit and for [practicing] implementing a protection control of said first power supply [system] circuit through said control circuit.

8. (Amended) A power [supplying] supply apparatus for a vehicle, comprising:

a battery;

a first power supply system [for being] wired in an interior of a vehicle through a first fuse from [a] the battery, [and] for supplying [a] power to a running control load of said vehicle;

a second power supply system [for being] wired in said interior of said vehicle through [another] a second fuse from said battery, [and] for supplying [the] power to an equipment system load of said vehicle; and

a third power supply system [for being] wired in said interior of said vehicle through a [further another] third fuse from said battery, [and] for supplying [the] power to a control circuit for controlling said equipment system load.

9. (Amended) A power [supplying] supply control apparatus for a vehicle, comprising:

a vehicle [mounting] mounted power supply;

a1 a vehicle [mounting] mounted load for receiving a supply of a power from said vehicle [mounting] mounted power supply through a driver circuit;

sub D1 a fuse connected between said vehicle [mounting] mounted power supply and said driver circuit;

a shutdown circuit provided between said driver circuit and [a] the fuse; and

a control circuit for [giving] providing a circuit shutdown signal to said shutdown circuit.

10. (Amended) A power [supplying] supply apparatus for a vehicle, comprising:

a vehicle [mounting] mounted power supply;

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~~a plurality of [plural] control modules, each having a control circuit in which a load drive signal is generated and a load drive circuit for controlling a power [supplying] supply to a load according to a drive signal from said control circuit;~~

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~~a first, relatively larger [large] power line for supplying [a] load drive power from said vehicle [mounting] mounted power supply through [one] a first fuse [against to] via at least two of said control modules; and~~

~~a second, relatively smaller [small] power line for supplying [a] control circuit [use] power from said vehicle [mounting] mounted power supply through [another] a second fuse [against to said] via control [circuit] circuits of said respective control modules.~~

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11. (Amended) [In a] A load control system having a load control module which is installed [to] at a specific position of a vehicle, [the load control module] for a power [supplying] supply apparatus [for a] of the vehicle, said module comprising:

~~a communication circuit which is connectable [connected] to another module through a communication line;~~

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a control circuit for outputting a load control signal [of a load] in accordance with a signal which is inputted through said communication circuit;

a battery;

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a drive circuit for controlling a power [supplying] supply to said load in accordance with an output signal from said control circuit;

a relay for opening and closing a power line to a [specific] particular load [by] as a function of an output from said control circuit; and

a first fuse connected between said battery and said specific load [and] for fusing when an over-current [is flown] flows into said [specific] particular load.

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12. (Amended) A power [supplying] supply apparatus for a vehicle according to claim 8, [the power supplying apparatus] comprising further:

at least one of an ignition coil switch [and/or] and
an accessory switch connected to said battery through [another]
a fourth fuse; and

[another] a separate power supply system for supplying
[a] power [through] from said at least one of an ignition coil
switch [and/or said] and an accessory switch, to a [further
another] fifth fuse.

13. (Amended) A power [supplying] supply apparatus for a
vehicle, comprising:

a load control apparatus for receiving [a] load drive
power from a vehicle [mounting] mounted power supply through an
ignition switch and a first fuse which is connected in series to
said ignition switch;

[another] a second control apparatus for receiving
[the] power from said vehicle [mounting] mounted power supply
through [another] a second fuse; and

a backup power supply [supplying] line for supplying
[the] power from said [another] second control apparatus to said
load control apparatus.

14. (Amended) A power [supplying] supply apparatus for a vehicle, comprising:

a control apparatus [in] which [a] distributes electric power [is distributed] from a vehicle [mounting] mounted power supply through a fuse;

a shutdown apparatus provided in an electric path of a power [take-in] input portion of said control apparatus;

a first driver circuit for supplying [the] power to a first load through said shutdown apparatus;

a second [another] driver circuit for supplying [the] power to [another load by going by a roundabout] a second load via an indirect circuit path of said shutdown apparatus.

15. (Amended) A power [supplying] supply apparatus for a vehicle, comprising:

at least one of a relay [and/or] and a fuse for opening a power line between a load and a power supply in response to a specific control condition; and

[being disperse arranged at a vicinity of]

a plurality of [plural] control apparatuses which are arranged at [a] respective specific [position] positions of said vehicle[.] for controlling said at least one of a relay and a fuse;

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wherein said at least one of a relay and a fuse are arranged at dispersed locations near said respective control apparatuses.

16. (Amended) A power [supplying] supply apparatus for a vehicle, comprising:

[to a specific load, from]

a vehicle [mounting] mounted power source; [supply, a power being supplied through]

a fuse[,];

a circuit shutdown relay[,]; and

a self shutdown type semiconductor switching
element[.];

wherein power is supplied from said power source to a
specific vehicle load via said fuse, said circuit shutdown relay
and said switching element.

a' 17. (Amended) A power [supplying] supply apparatus for a
vehicle, comprising:

a plurality of [plural] load control modules connected
by a communication line;

a first [an] electric [wiring] power line for supplying
[a] power to a first one of said load control modules through a
fuse; and

[another] a second electric [wiring] power line for
supplying [the] power to [another] a second one of said load
control modules through [another] a second fuse.

Sub D1 18. (Amended) A power [supplying] supply apparatus for a
vehicle, comprising:

a vehicle mounted power source;

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a relay [comprised of] having a relay coil which interruptibly receives [is supplied a] power from [a] said vehicle [mounting] mounted power [supply] source when at least one of an ignition switch [and/or] and an accessory switch is closed, and a relay contact which is closed when said relay coil [is supplied the] receives power;

a load control module having a power distribution function connected to said vehicle [mounting] mounted power supply through said relay contact;

said load module comprising:

an input interface for taking in a load operation signal which is given by at least one of another control module [and/or] and an outside operation signal generation means;

a control circuit for outputting a load drive signal in accordance with said load operation signal which is taken in from said input interface; and

an output interface for outputting said load drive signal to a driver circuit from said control circuit.

19. (Amended) A power [supplying] supply apparatus for a vehicle according to claim 18, wherein said input interface has a communication circuit.

20. (Amended) A power [supplying] supply apparatus for a vehicle according to claim 18, wherein a fuse is connected between said relay contact and said specific load.

21. (Amended) A power [supplying] supply apparatus for an automobile, comprising:

a rear control module installed [to] in an area [of a rear portion from] which is rearward of a front [portion] seat of the automobile;

a front control module installed [to] in an area [of a front portion from] which is forward of said front [portion] seat of the automobile;

a central control module installed between said front control module and said rear control module; [of the automobile;]

a rear [side] electric power line for connecting said rear control module and a battery;

a front [side] electric power line for connecting said front control module and said central control module to said battery;

a¹ an ignition switch connected to an input interface of said central control module;

Sub D1 an ignition relay coil connected to a communication line of said front control module;

an ignition relay contact [for closing/opening] which closes and opens in [which said ignition relay coil is supplied or shutdown the power by] response to a signal of said ignition switch which is inputted to said input interface of said front control module from said central control module; and

a specific load [in] to which [the] power from said front side electric power line is supplied and interrupted through said ignition relay contact.

22. (Amended) A power [supplying] supply apparatus for an automobile according to claim 21, further comprising:

a fuse connected [to] between said ignition relay contact and said specific load.

a' 23. (Amended) A power [supplying] supply apparatus for an automobile according to claim 22, [comprising] wherein:

said specific load [being] is one of an alternator [and/or] and a stator.

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D1 24. (Amended) A power [supplying] supply apparatus for an automobile according to claim 22, [comprising:] wherein said ignition relay and said fuse are received in a relay/fuse box [which is] provided [adjacently] adjacent to said control

25. (Amended) A power [supplying] supply apparatus for an automobile, comprising:

a load drive control [use drive] circuit provided between a power supply of said automobile and a specific load;

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a relay provided between said load drive control [use drive] circuit and said power supply;

a sleep control circuit for opening a relay contact by stopping the current in flowing a coil of said relay and performing a shutdown of an electric line to said specific load in response to [by a] detection [in which said] that the automobile is not operated and power is not needed in said specific load. [is not needed a power.]

IN THE ABSTRACT:

Please substitute the Abstract of the Disclosure attached as a separate page for the original Abstract presently in the application.

REMARKS

Entry of the amendments to the specification, claims and abstract before examination of the application is respectfully requested. These claims patentably define over the art of record.